

Request for Conditional Closure

Site:

The Duplex Building and Former Electrical Shop (E-Shop), also known as Two Party Agreement (TPA) Site 9i and National Oceanic and Atmospheric Administration (NOAA) Site 24.

Location:

St. Paul Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea. On St. Paul Island, the Duplex Building and Former E-Shop are situated east of Village Hill in the central portion of the city of St. Paul east the community grocery store (57°07'21" latitude, 170°16'50" longitude). The building and immediately adjacent lands are located on U.S. Government property in Tract 46 (Figures 1, 2, and 3).

Legal Description: Lots 4 and 5, Block 20, U.S. Survey No. 4943, Alaska, Tract "A", St Paul Townsite, accepted by the Bureau of Land Management August 2, 1968. The sites are owned by NOAA. However, Tanadgusix Corporation (TDX) occupies the Duplex Building, and the Tribal Government of St. Paul (Tribe) occupies the Former E-Shop.

Type of Release:

The Duplex Building is a residential structure, with heating oil underground storage tanks (USTs) formerly located along the east and west walls supplying each unit. When removed by NOAA in 2003, no release was observed in or around the location of the east UST. Upon removal of the west tank, petroleum contaminated soil was observed underneath the tank, indicating a release had occurred. The Former E-Shop had formerly been a powerhouse, with fuel oil supplied by above ground storage tanks (ASTs) some time after 1911. In 2000, NOAA removed a small 55 gallon (gal.) drum used as a UST from the site. NOAA found petroleum contamination at that location and in other nearby locations sampled in 2001 (NOAA 2003). On June 17, NOAA learned that a vandal had disconnected the fuel line leading from an approximate 75 gal. AST to the Head Start Program building (E-Shop) operated by the Tribe (Figure 7). NOAA verbally reported the incident on June 17 to ADEC, then followed the same day with a written notification via a completed Alaska Department of Environmental Conservation (ADEC) "Oil and Hazardous Substances Spill Notification" form (NOAA 2004a). This activity resulted in a presumptive 75 gal. spill of Jet A fuel.

History:

The Duplex Building and Former E-Shop are situated between Bartlett Boulevard (Blvd.) and Sandy Lane in the east portion of the City of St. Paul. Sometime after 1951, the Duplex Building was moved to this site from its original location on the easterly side of what is now Bartlett Blvd., and two USTs were installed at that time to store fuel for heating purposes (NOAA 2003). This building originally served as quarters for a Navy radio station complex.

The Former E-Shop was originally constructed in 1911, when it was used as the powerhouse for a former Navy radio station complex. On August 10, 1937, the radio station complex was transferred from the DoD to the Department of Commerce. At that time, the powerhouse was

fueled by an aboveground storage tank (AST) farm that was removed at some later date. An UST was subsequently installed to provide fuel oil to the building. Since that time, the building has been converted for use as a Head Start program school for children on St. Paul Island (NOAA 2003).

In 2003, DoD identified the former Navy electrical shop as a Formerly Used Defense Site (FUDS) (DOD 2003). Public Law 106-562 prohibits NOAA from undertaking any cleanup actions at FUDS on the Pribilof Islands.

Following the NOAA removal of the USTs at the Duplex Building in 2003, the occupant (TDX) installed 250 gal. ASTs in their place (Figure 7). The Head Start Program building (E-Shop) is currently serviced by an approx. 500 gal. AST located on the southeast corner of the building, and an approx. 75 gal. AST on the northwesterly corner of the building (Figure 7).

Summary of Site Investigations:

In 2000 and 2001, Columbia Environmental Sciences, Inc. (CESI) advanced soil borings and installed and sampled groundwater monitoring wells in the vicinity of the Duplex Building and Former E-Shop (CESI 2001). Additionally, IT Alaska Corporation conducted groundwater sampling in 2001 (IT Alaska Corporation 2002). Analytical data for soil samples collected during these events revealed the presence of petroleum contamination including diesel-range organic compounds (DRO) and residual-range organic compounds (RRO) at maximum concentrations of 1,500 milligrams per kilogram (mg/kg) and 15,000 mg/kg, respectively. The area of contamination was centered between the Duplex Building and Former E-Shop; no contamination was identified on the east side of the Duplex Building. An UST in the form of a 55-gallon drum was removed from the northeast corner of the Former E-Shop in 2000; analytical data for a soil sample collected from the bottom of the excavation at refusal revealed the presence of DRO at a concentration of 480 mg/kg and RRO at a concentration of 4,800 mg/kg (CESI 2001).

CESI installed one groundwater monitoring well (MW46-20) upgradient of the Duplex Building and Former E-Shop, and five monitoring wells (MW46-13, MW46-17, MW46-18, MW46-19, and MW46-26) downgradient (Figure 4). Analytical data for groundwater samples collected between September 2000 and September 2001 indicated the presence of DRO (up to 12,000 micrograms per liter [$\mu\text{g/L}$]) at concentrations above the cleanup criterion (1,500 $\mu\text{g/L}$) in monitoring wells MW46-13, MW46-18, and MW46-19 located downgradient of the Duplex Building. In addition, analyses detected gasoline range organics (GRO) at concentrations above the cleanup criterion (1,300 $\mu\text{g/L}$) in monitoring well MW46-19. Concentrations of other analytes among all monitoring wells in the vicinity of the Duplex Building and Former E-Shop were below cleanup levels (CESI 2001).

Cleanup of the petroleum contamination was conducted during July and August of 2003. NOAA collected and analyzed confirmation samples for several organic constituents and lead as described below in the Summary of Cleanup Actions section. Results of the confirmation samples indicated high levels of lead at 2 samples (Table 1). In 2004, following a request by the

tribe, NOAA collected additional samples around the Head Start building (E-Shop) and analyzed them for lead on-site using an X-ray Fluorescence meter (XRF). All twelve samples analyzed detected lead concentrations well below the 400 mg/kg cleanup level (Table 2).

NOAA examined soil lead data from other petroleum contaminated sites on St. Paul and found that there was no association between high lead levels and high petroleum levels. Presumptively, NOAA concluded that the lead contamination found at depth at the E-Shop was associated with FUDS activities (NOAA 2004b). Activities at the Former E-Shop leading to lead contamination could include battery disposal, battery acid spillage, or soldering.

Summary of Applied Cleanup Levels:

NOAA employed ADEC Method Two cleanup criteria, discussed at 18 AAC 75.341(c) (ADEC 2000). Alternative cleanup levels were also applied for some compounds. For benzene, under the TPA, NOAA had the option to cleanup to the less stringent State of Alaska cleanup level in effect in 1991 (ADEC 1991). Additionally, NOAA proposed and ADEC approved the use of alternative cleanup levels under 18 AAC 75.345 and 18 AAC 75.350, commonly referred to as the Ten Times Rule (ADEC 2002, Mitretek Systems 2002). According to these regulations, if groundwater beneath a site contains contaminant concentrations above the cleanup levels provided in ADEC Table C, then the soil may be remediated to levels ten times higher than those provided in Method Two Tables B1 and B2 for the migration to groundwater pathway for those contaminants found in groundwater at concentrations above the cleanup levels provided in ADEC Table C; however, if the inhalation or ingestion pathway values are more stringent than the migration to groundwater pathway, then the more stringent value is to be applied. ADEC uses 15 feet below ground surface (bgs) to define subsurface soil to which residents will have a reasonable potential to be exposed through the inhalation or ingestion pathways (ADEC 2000; 18 Alaska Administrative Code 75.340 (j)(2)). Therefore NOAA is not obligated to excavate contaminated soil occurring at depths deeper than 15 feet to address the inhalation and ingestion pathways. Cleanup criteria were applied to the maximum extent practicable (18 AAC 75.325 (f), 18 AAC 75.990).

Summary of Cleanup Actions:

As described in the Corrective Action Plan (NOAA 2004b), excavation activities for the Duplex Building and Former E-Shop commenced on July 29, 2003, and were completed on August 4, 2003. The two 1,000-gallon USTs at the Duplex Building were removed after they had been uncovered and the contents pumped into a tanker truck for future use. Initial areas of excavation were selected based on the UST locations and suspected contamination identified during previous site investigations. Screening analyses, including thin layer chromatography (TLC) screening sample analyses, and visual and olfactory observations determined the extent of excavation. Also, the extent of soil excavation was driven by Method Two cleanup levels, and not the alternative cleanup levels afforded under the Ten Times Rule, unless obstructions prevented further excavation.

Following UST removal, the excavation along the east side of the Duplex Building was advanced to a maximum depth of 7 feet bgs (Figure 3). No evidence of contamination was observed either in the excavation or in soil removed from the excavation. NOAA collected five

confirmation samples from the excavation for laboratory analyses; target analytes included benzene, toluene, ethylbenzene, and total xylenes (BTEX), DRO, GRO, RRO, select polynuclear aromatic hydrocarbons (PAHs), and lead (Figure 4). None of these samples exceeded the Method Two cleanup levels (Tables 1 and 3).

During this corrective action, NOAA removed approximately 50 CY of soil from the excavation along the east side of the Duplex Building.

The excavation along the west side of the Duplex Building focused around the UST in that area (Figure 3). The building and the presence of numerous utility lines, several of which could not be positively identified as active or inactive, restricted the extent of excavation. Lines that were encountered included multiple water lines and a junction box, a sewer line, and a phone line, as well as other unidentified utility lines. The excavation was advanced to a maximum depth of 7.5 feet bgs and was expanded to the west based on TLC screening sample results; due to the presence of utility lines, the depths of excavation generally became shallower as the excavation progressed west toward the Former E-Shop. Further excavation with available equipment was not technically feasible. NOAA collected seven confirmation samples from the excavation for laboratory analyses. Target analytes included BTEX, DRO, GRO, RRO, select PAHs, and lead (Figure 4). DRO concentrations varied from not detected to 840 mg/kg among the seven samples; four of the seven samples (SP24-CS-001-075, SP24-CS-003-020, SP24-CS-014-060, and SP24-CS-015-040) collected from this area exceeded the ADEC Method Two cleanup level of 250 mg/kg, but none of these samples exceeded the alternative cleanup level of 2,500 mg/kg. In addition, one sample (SP24-CS-003-020) contained lead at a concentration of 627 mg/kg, exceeding the ADEC Method Two cleanup level of 400 mg/kg; all other lead concentrations were below the ADEC Method Two cleanup level. Concentrations for all other analytes were below the Method Two criteria.

During this corrective action, NOAA removed approximately 70 CY of soil from the west side of the Duplex Building.

In conjunction with activities at the Duplex Building, personnel conducted excavation activities at the Former E-Shop based on analytical data from previous site investigations focused at the northeast corner and the southeast corner UST locations (Figures 3 and 4). The excavation at the northeast corner of the Former E-Shop was conducted in the area of a former UST (55-gallon drum) that had been removed in 2000. The excavation was advanced to a maximum depth of 10 feet bgs; although evidence of contamination was present along the east wall, the excavation could not be expanded in that direction due to the presence of an active phone line, which was broken and repaired during the corrective action, and the likely presence of an active water line. An active electrical line was also present near the northern boundary of the excavation (Figure 4). Three confirmation samples and two field duplicate samples were collected from the excavation at the northeast corner of the Former E-Shop for laboratory analyses, including BTEX, DRO, GRO, RRO, select PAHs, and lead (Figure 4). These samples indicated DRO concentrations that varied from not detected to 2,700 mg/kg (Table 1). One of the three confirmation samples (SP24-CS-013-050) collected from this area exceeded both the ADEC Method Two cleanup level of 250 mg/kg and the alternative cleanup level of 2,500 mg/kg,

however no further removal is practicable at this location due to the proximity of a buried water line (Figure 4); all other DRO concentrations were below the ADEC Method Two cleanup level. No other contaminants were identified at concentrations above the soil cleanup levels (Table 3).

During this corrective action, NOAA removed approximately 20 CY of soil from the northeast corner of the Former E-Shop.

Excavation at the southeast corner of the Former E-Shop was conducted beneath an active AST (temporarily moved) to investigate contamination identified during a previous investigation (Figures 3 and 4). During excavation, numerous copper rods were uncovered, presumably grounding rods associated with activities at the former radio station complex. The excavation was advanced to a maximum depth of approximately 7 feet bgs. Further excavation in this area was restricted because of the building to the west, and the presence of utility lines including a previously unidentified, but active water line at the north end of the excavation, a phone line along the east edge of the excavation, and an unknown pipeline along the south edge of the excavation (Figure 4). The active water line along the north edge of the excavation was inadvertently ruptured during excavation activities, but was subsequently repaired. Five confirmation samples and two field duplicate samples were collected from the excavation for laboratory analyses including BTEX, DRO, GRO, RRO, select PAHs, and lead (Figure 4). Confirmation samples collected from the excavation at the southeast corner of the Former E-Shop indicated DRO concentrations varied from 200 mg/kg to 620 mg/kg; three of the five samples (SP24-CS-002-050, SP24-CS-016-070, and SP24-CS-019-050) exceeded the ADEC Method Two cleanup level of 250 mg/kg, but none of the samples exceeded the alternative cleanup level of 2,500 mg/kg. In addition, one sample (SP24-CS-002-050) contained lead at a concentration of 4,090 mg/kg, exceeding the ADEC Method Two cleanup level of 400 mg/kg; all other lead concentrations were below the ADEC Method Two cleanup level. No other analytes were identified at concentrations above the soil cleanup levels.

During this corrective action, NOAA removed approximately 30 CY of soil from the excavation at the southeast corner of the Former E-Shop.

The June/July 2004 spill incident at the Head Start Program building (E-Shop) was quickly followed by a time critical removal action performed by NOAA and the Tribe. NOAA and the Tribe removed approximately 15 CY of contaminated soil from the site. Various obstructions limited the excavation within Parcel 6F. Obstructions included the building concrete footer, and buried telephone and electric lines. Contamination from this incident spread onto adjacent property owned by Mr. John R. Mercurief. Obstructions, including electrical and possible telephone, sewer and water lines limited the immediate excavation on the adjacent property. NOAA contends that the contamination on the private property adjacent to Parcel 6F bears the responsibility of the Tribe.

Recommended Action:

In accordance with paragraph 59 of the Two Party Agreement (NOAA 1996), and in recognition that NOAA is precluded by Public Law 106-562 from conducting restoration activities at FUDS, and that NOAA is not responsible for that portion of the June/July 2004 Jet A fuel release that

migrated onto an adjacent private property, NOAA requests written confirmation that NOAA completed all appropriate corrective action, to the maximum extent practicable, at the Duplex Building and E-Shop, TPA Site 9i, NOAA Site 24 in accordance with the Agreement and that ADEC grant a conditional closure that will not require further remedial action from NOAA. ADEC will require additional containment, investigation, or cleanup if subsequent information indicates that the level of contamination that remains does not protect human health, safety, or welfare, or the environment.

References:

Alaska Department of Environmental Conservation (ADEC). 1991. *Interim Guidance for Non-UST Contaminated Soil Cleanup Levels. Contaminated Sites Program.* July 17.

ADEC. 2000. Title 18 of the *Alaska Administrative Code 75*, Articles 3 and 9. Oil and Hazardous Substances Pollution Control Regulations. State of Alaska. Affective Date January 30, 2003.

ADEC. 2002. *Letter from Louis Howard (ADEC) to John Lindsay (NOAA Pribilof Project Office).* May 30.

Columbia Environmental Sciences, Inc. (CESI). 2001. Draft Site Characterization Report, Tract 46 and Vicinity (TPA Site 9), St. Paul Island, Alaska. Version 2.1. Kennewick, WA. December 16.

US Department of Defense (DOD). 2003. Letter from Stacey Halfmoon, Tribal Liaison, to Phil Zavakil, Tribal Government of St. Paul Tribal Ecosystem Conservation Office. February 27.

IT Alaska Corporation. 2002. *Draft Annual Groundwater Monitoring Report 2001, St. Paul Island, Alaska.* March.

Mitretek. 2002. *Groundwater Use and Classification in the Vicinity of Tract 46, St. Paul Island, Pribilof Islands, Alaska.* Prepared by Mitretek Systems, for the National Oceanic and Atmospheric Administration. June 5.

NOAA. 1996. *Pribilof Islands Environmental Restoration Two Party Agreement.* Attorney General's Office File No. 66 1-95-0126, National Oceanic and Atmospheric Administration. January 26.

NOAA. 2003. *Corrective Action Plan for Underground Storage Tank Removals at Tract A House 102 (TPA Site 9r) & Duplex Building and Former E-Shop (TPA Site 9i), St. Paul Island, Alaska.* April 29.

NOAA. 2004a. *Oil and Hazardous Substances Spill Notification, Old Village St. Paul Island Head Start Building.* June 17.

Request for Conditional Closure
TPA Site 9i, NOAA Site 24, - Duplex Building and E-Shop

St. Paul Island, Alaska

NOAA. 2004b. *Draft Corrective Action Report Site 24/TPA Site 9i – Duplex Building and Former E-Shop, St. Paul Island, Alaska.* June 4.

For the National Oceanic and Atmospheric Administration



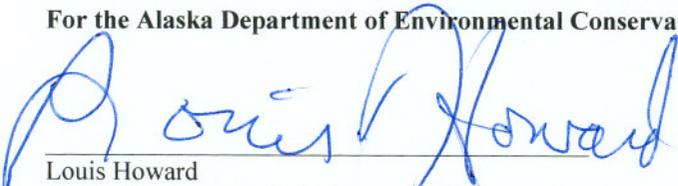
John Lindsay
NOAA, Pribilof Project Office



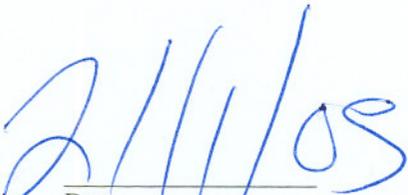
Date

Approvals: In accordance with Paragraph 59 of the Two Party Agreement, this is to confirm that all corrective action has been completed to the maximum extent practicable at the Duplex Building and Former Electrical Shop, TPA Site 9i/NOAA Site 24, in accordance with the Agreement and that no further remedial action is required as a part of this conditional closure granted by ADEC.

For the Alaska Department of Environmental Conservation



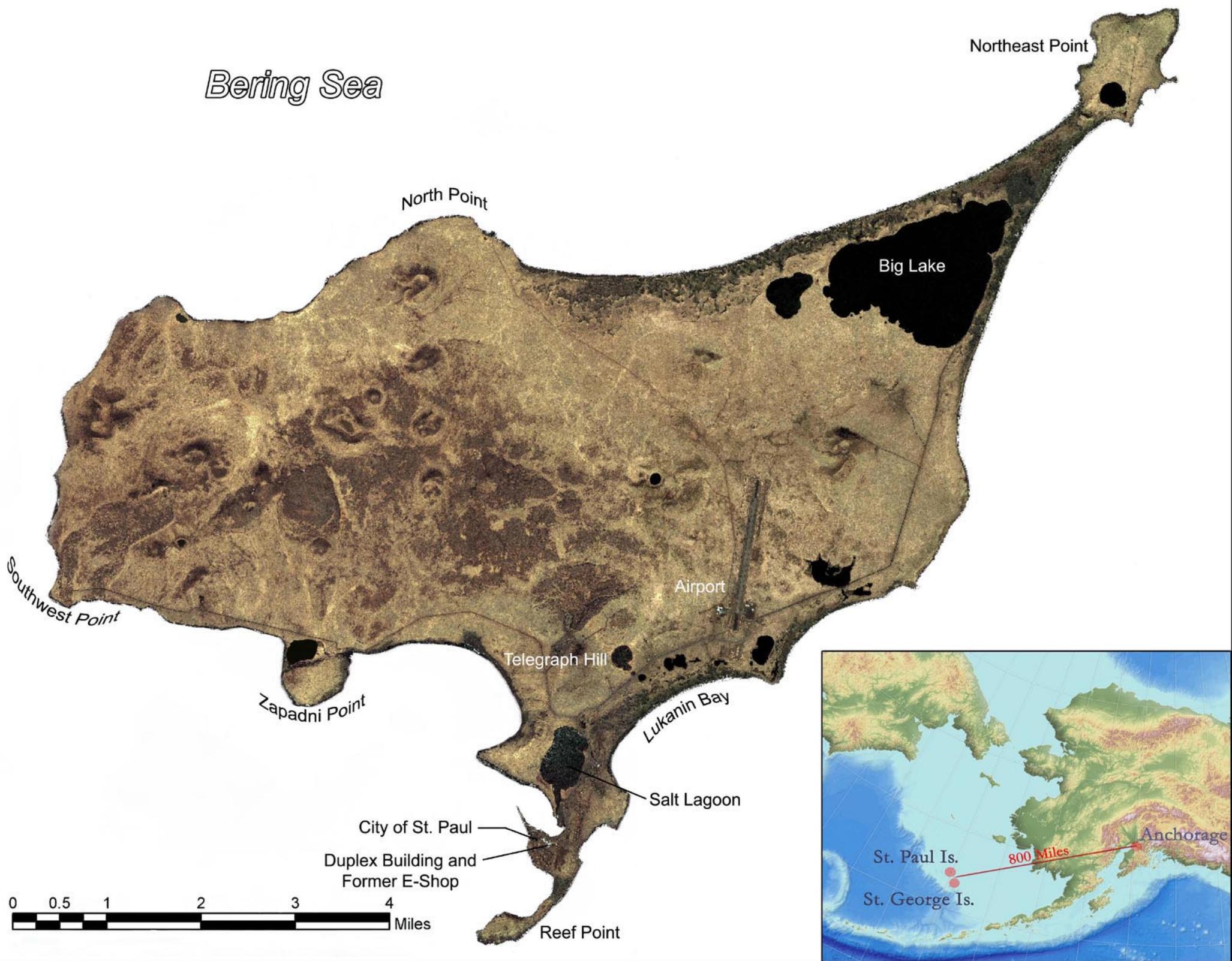
Louis Howard
Alaska Department of Environmental Conservation
Remedial Project Manager



Date

FIGURES

Bering Sea



Figure

1

St. Paul Island Vicinity Map
Duplex Building and Former E-Shop
Site 24/TPA Site 9i
St. Paul Island, Alaska

Source: Ikonos Satellite
Imagery, 2001





Figure
2

Legal Property Description Map
Duplex and Former E-Shop
Site 24/TPA Site 9i
St. Paul Island, Alaska

Sources: BLM Tract (BLM MTPs 1983), TPA 9i Boundary (NOAA GIS 2004), Aerial Photo (Aeromap US 1996).





Sample Location	Depth Interval (feet bgs)	DRO (PPM)	RRO (PPM)
RBSB-1	6-8	260	400
RBSB-3	6-8 10-12	<10 29	<50 150
RBSB-4	8-10 10-12	11 <10	11 <10
RBSB-5	2-4 6-8	1500 830	15000 8700
RBSB-6	4-6 9-11	130 310	1100 260
RBSB-7	8-10	<10	<50
RBSB-8	6-8 10-12	12 <10	12 <50
RBSB-9	6-8 10-12	<10 13	<50 13
Radio Bldg UST B	5-6	480	4400

Figure 3

Historical Sampling Results
 Duplex Building and Former E-Shop
 Site 24/TPA Site 9i
 St. Paul Island, Alaska

Sources: Boundaries and Buildings (Hart Crowser 1997), Sample Locations and Wells (NOAA Pribilof Project Database 2004), USTs are approximate.



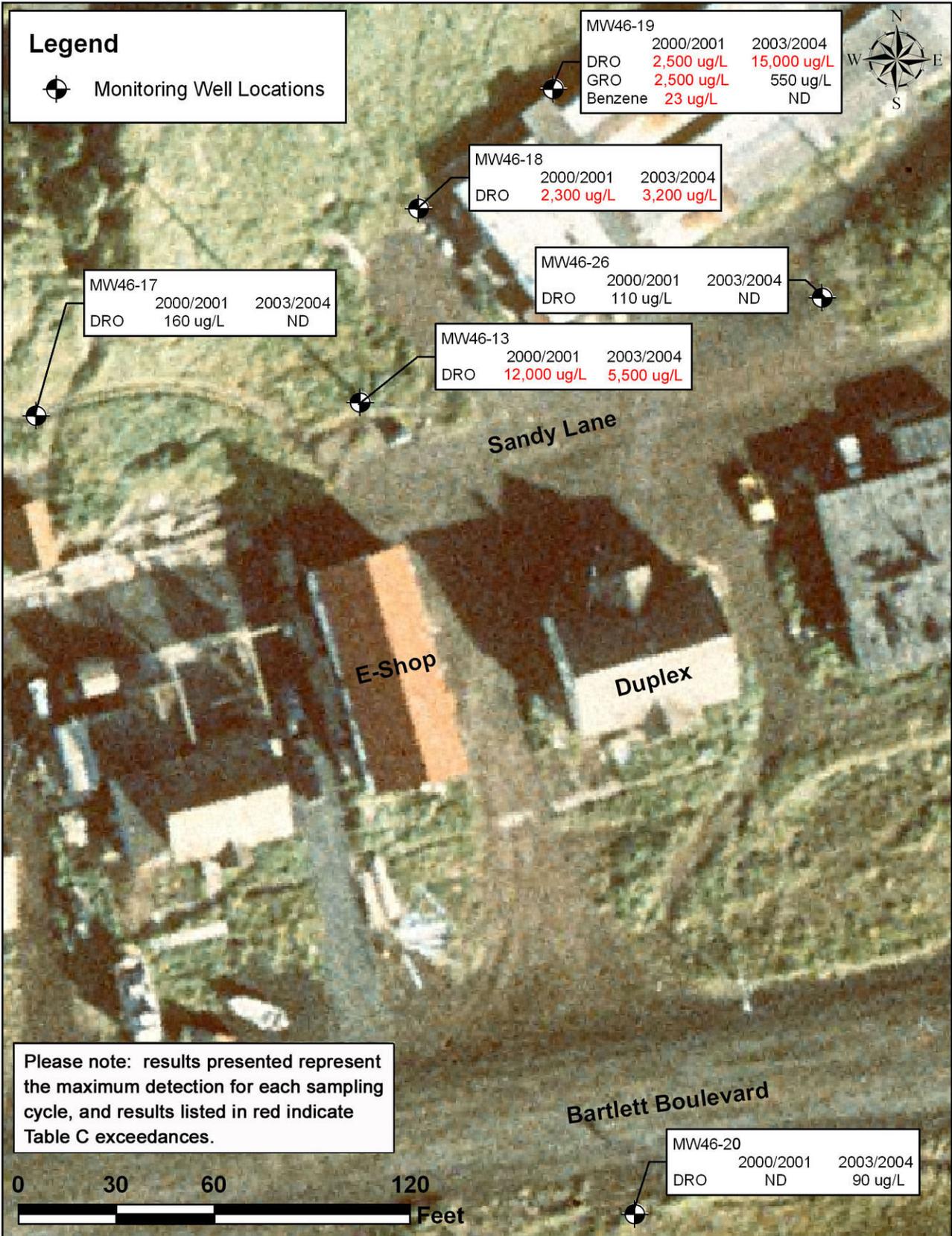


Figure
4

Groundwater Sampling Results
 Duplex Building and Former E-Shop
 Site 24/TPA Site 9i
 St. Paul Island, Alaska

Sources: Monitoring Well Locations (NOAA GPS 2003), Aerial Photo (Aeromap US 1996).



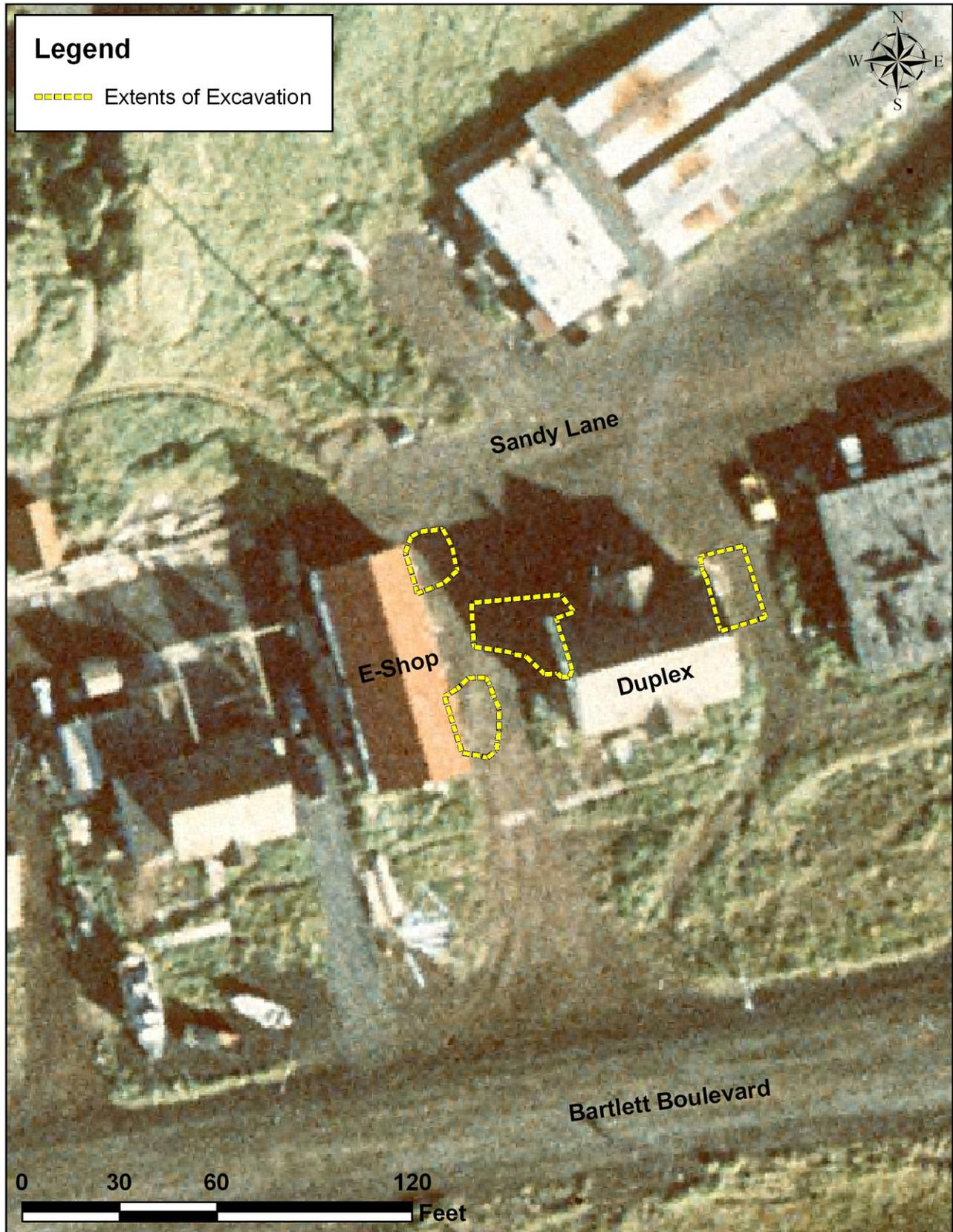


Figure
5

Areas of Excavation
 Duplex Building and Former E-Shop
 Site 24/TPA Site 9i
 St. Paul Island, Alaska

Sources: Excavation
 Extents and Well Locations
 (NOAA GPS 2003); Aerial
 Photo (Aeromap US 1996).



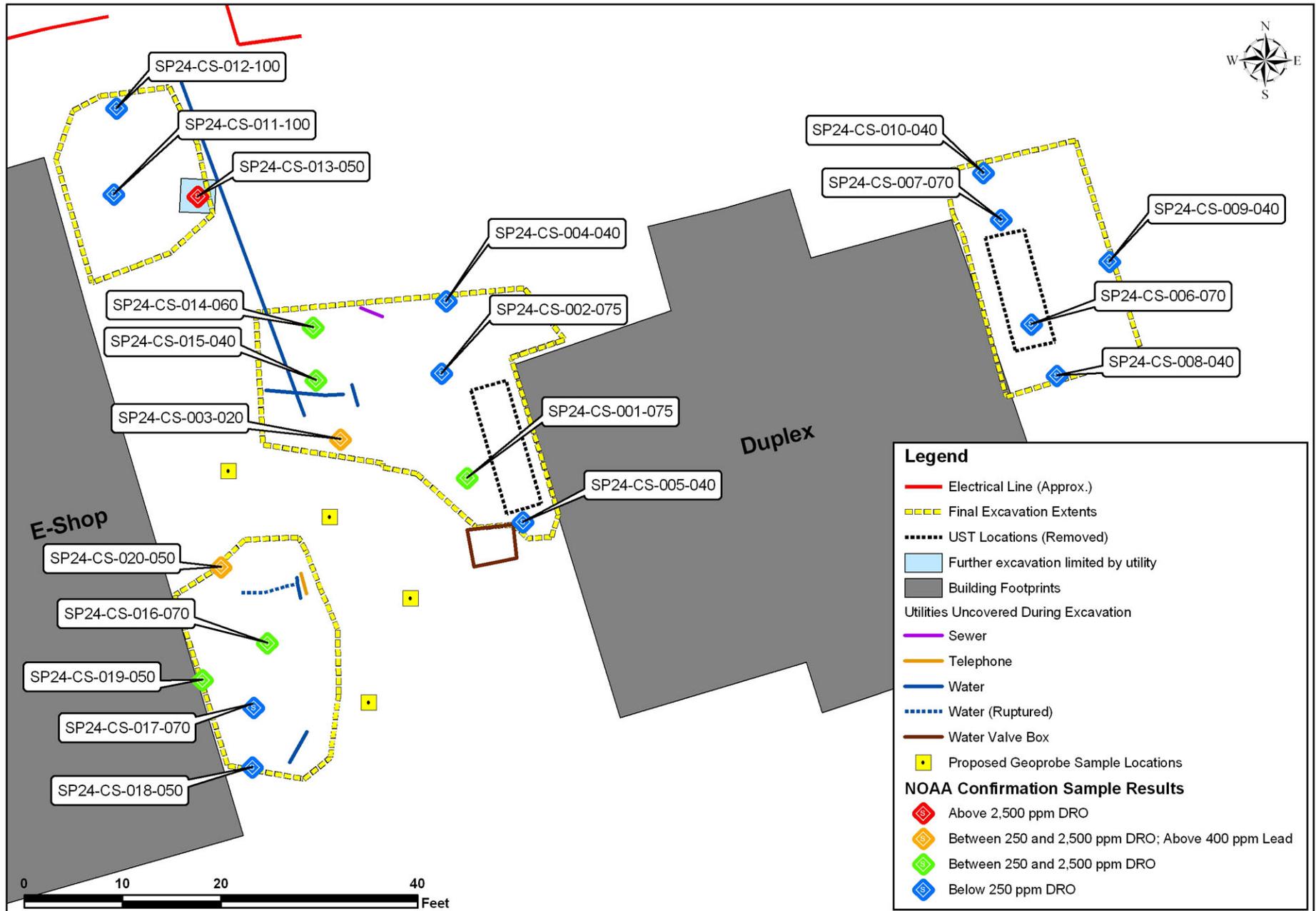


Figure 6
 Sampling Location Map
 Duplex Building and Former E-Shop
 Site 24/TPA Site 9i
 St. Paul Island, Alaska

Sources: Excavation Extents, Confirmation Samples, UST and Utility Locations (NOAA GPS, 2003), Building Locations (NOAA GIS, 2003), Proposed Geoprobe Sample Locations (NOAA GIS 2004).



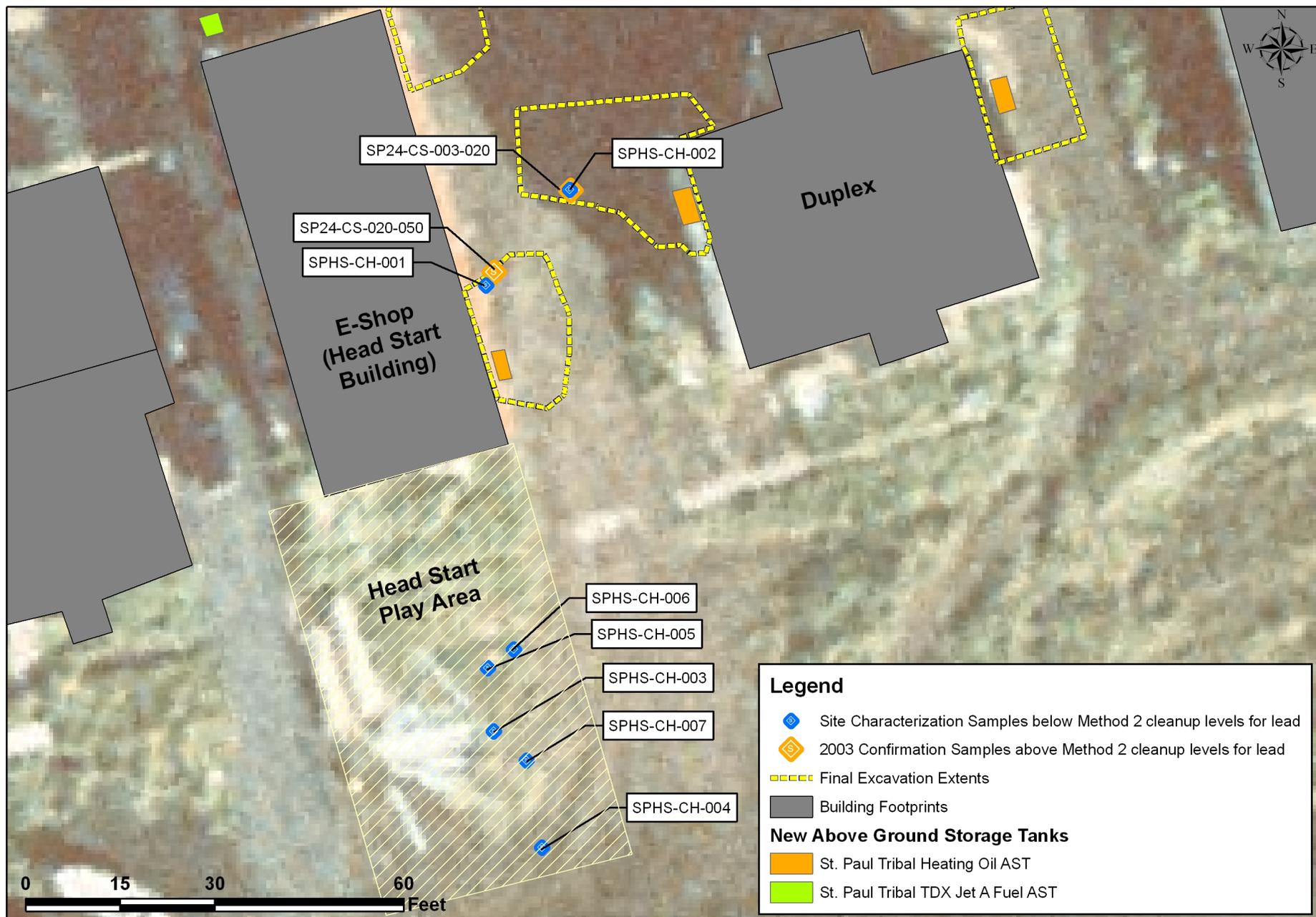


Figure
7

X-Ray Fluorescence Site Characterization Sampling Location Map
Duplex Building and Former E-Shop
Site 24/TPA Site 9i
St. Paul Island, Alaska

Sources: Excavation Extents and Confirmation Samples (NOAA GPS 2003), Building Locations (NOAA GIS 2003), Site Characterization Sample Locations (NOAA GPS 2004), Aerial Photo (Aeromap US 1996).



TABLES

TABLE 1

**ANALYTICAL DATA SUMMARY - BTEX, GRO, DRO, RRO, AND LEAD
SITE 24/TPA SITE 9i - DUPLEX BUILDING AND FORMER E-SHOP
ST. PAUL ISLAND, ALASKA**

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Sample Number	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)	Lead (mg/kg)
TPA Site 9i Confirmation Samples									
Duplex Building									
SP24-CS-001-075	7.5	0.12 U	0.12 U	0.12 U	0.12 U	6 U	610	3,900	50.6
SP24-CS-002-075	7.5	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U	1.86
SP24-CS-003-020	2	0.18 U	0.18 U	0.18 U	0.18 U	9 U	780	4,600	627
SP24-CS-004-040	4	0.04 U	0.04 U	0.04 U	0.04 U	2 U	10 U	50 U	1.86
SP24-CS-005-040	4	0.14 U	0.14 U	0.14 U	0.14 U	7 U	180	1,300	278
SP24-CS-006-070	7	0.04 U	0.04 U	0.04 U	0.04 U	2 U	10 U	50 U	1.90
SP24-CS-007-070	7	0.02 U	0.02 U	0.02 U	0.02 U	1 U	58	120	30.6
SP24-CS-008-040	4	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U	2.89
SP24-CS-009-040	4	0.04 U	0.04 U	0.04 U	0.04 U	2 U	10 U	50 U	2.87
SP24-CS-010-040	4	0.03 U	0.03 U	0.03 U	0.03 U	2 U	150	250	2.39
SP24-CS-014-060	6	0.14 U	0.14 U	0.14 U	0.14 U	7 U	800	5,300	50.8
SP24-CS-015-040	4	0.26 U	0.26 U	0.26 U	0.26 U	13 U	840	5,100	129
Former E-Shop									
SP24-CS-011-100	10	0.04 U	0.13	0.04 U	0.17	2 U	180	600	22.8
SP24-CS-011-250 ^a	10	0.04 U	0.04 U	0.04 U	0.04 U	2 U	160	520	14.9
SP24-CS-012-100	10	0.02 U	0.02 U	0.02 U	0.02 U	1 U	10 U	50 U	1.79
SP24-CS-012-250 ^b	10	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U	2.83
SP24-CS-013-050	5	0.11 U	0.11 U	0.11 U	0.11 U	6 U	2,700 J	5,300	177
SP24-CS-016-070	7	0.07 U	0.07 U	0.07 U	0.07 U	4 U	530	440	4.51
SP24-CS-016-250 ^c	7	0.05 U	0.05 U	0.05 U	0.05 U	3 U	620	450	9.33
SP24-CS-017-070	7	0.06 U	0.06 U	0.06 U	0.06 U	3 U	240	960	18.0
SP24-CS-017-250 ^d	7	0.06 U	0.06 U	0.06 U	0.06 U	3 U	200	840	26.0
SP24-CS-018-050	5	0.07 U	0.07 U	0.07 U	0.07 U	4 U	220	430	120
SP24-CS-019-050	5	0.11 U	0.11 U	0.11 U	0.11 U	6 U	480	3,800	15.9
SP24-CS-020-050	5	0.08 U	0.08 U	0.08 U	0.08 U	4 U	580	1,800	4,090
Trip Blank Sample									
Trip blank	--	0.02 U	0.02 U	0.02 U	0.02 U	1 U	--	--	--
<i>Method Two Cleanup Level^e</i>		0.02	5.4	5.5	78	300	250	10,000	400
<i>Alternative Cleanup Level^f</i>		0.5 ^g	54	NA	NA	1,400 ^h	2,500	NA	400

TABLE 1

ANALYTICAL DATA SUMMARY - BTEX, GRO, DRO, RRO, AND LEAD SITE 24/TPA SITE 9i - DUPLEX BUILDING AND FORMER E-SHOP ST. PAUL ISLAND, ALASKA

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Notes

bold	Indicates concentration above one or both cleanup levels
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
DRO	Diesel-range organic compounds
GRO	Gasoline-range organic compounds
mg/kg	Milligram per kilogram
--	Not analyzed
NA	Not available
RRO	Residual-range organic compounds
TPA	Two-Party Agreement
U	The analyte was analyzed for, but not detected above the sample reporting limit
J	The analyte was positively identified, but the numerical value is the estimated concentration; the result is considered qualitatively acceptable, but quantitatively unreliable
a	Duplicate of sample number SP24-CS-011-100
b	Duplicate of sample number SP24-CS-012-100
c	Duplicate of sample number SP24-CS-016-070
d	Duplicate of sample number SP24-CS-017-070
e	Cleanup level is from Title 18 of the <i>Alaska Administrative Code</i> 75, "Oil and Hazardous Substances Pollution Control Regulations," published by the State of Alaska and amended through October 28, 2000.
f	Cleanup level obtained from ADEC Method Two based on the "Ten Times Rule" applied to the migration to groundwater pathway, as discussed in Section 5.0 of the corrective action plan (National Oceanic and Atmospheric Administration [NOAA] 2003a).
g	Under the TPA, NOAA is obligated to comply with the 1991 ADEC cleanup level for benzene (0.5 mg/kg).
h	Cleanup level is selected based on the more stringent value associated with ingestion and inhalation pathways.

TABLE 2
SOIL SAMPLE RESULTS - XRF ANALYSIS FOR LEAD
HEAD START BUILDING (FORMER E-SHED), ST. PAUL ISLAND

Sample	Sample ID Number	Sample Depth (bgs)	ADEC Cleanup Level (ppm)	1 st Run Results (ppm)	2 nd Run Results (ppm)
HS Ramp, 0" - 6"	SPHS-CH-001-005	0" – 6"	400	68	96
HS Ramp, 6" - 12"	SPHS-CH-001-010	6" – 12"	400	97.5	153
HS Driveway, 0" - 6"	SPHS-CH-002-005	0" – 6"	400	49.2	84.2
HS Driveway, 6" -12"	SPHS-CH-002-010	6" – 12"	400	BD 28	BD 26
HS 3, 0"-6"	SPHS-CH-003-005	0" – 6"	400	35.9	BD 28
HS 3, 6"-12"	SPHS-CH-003-010	6" – 12"	400	BD 27	BD 27
HS 4, 0" - 6"	SPHS-CH-004-005	0" – 6"	400	BD 30	BD 34
HS 4, 6"-12"	SPHS-CH-004-010	6" – 12"	400	BD 28	BD 33
HS 5, 0" - 6"	SPHS-CH-005-005	0" – 6"	400	BD 32	BD30
HS 5, 6" - 12"	SPHS-CH-005-010	6" – 12"	400	BD 26	BD 27
HS 6, Surface Comp	SPHS-CH-006-000	0"	400	BD 30	BD 31
HS 7, Surface Comp	SPHS-CH-007-000	0"	400	BD 34	BD 34

Notes:

ADEC Soil Cleanup Level, Residential: 400 mg/kg (400 ppm), Total Lead (Pb)

Samples Collected – Soil Exterior to Head Start Building:

Surface 12" X 12" Surface Composite
Direct Push, Subsurface Hand driven Geoprobe, Composites from 0"-6" bgs & 6"-12" bgs

Sample Preparation: Samples air dried and tested through sample bag
Analysis: Total Lead (Pb)
Analysis Period: A minimum of 60 seconds, all test runs.
Instrument Used: NITON 700 Series, XRF Spectrum Analyzer Multi-Elemental, Version 5.2
Results Units: Parts per million (ppm)
Samples taken: Wednesday, July 7, 2004
Samplers: Nir Barnea, NOAA NOS OR&R & Jeffry Rodin, USEPA Region X
Samples analyzed: Saturday, July 10, 2004
Analyzer: Jeffry Rodin, USEPA Region X

Abbreviations:

BD = below detection limit indicated
HS = Head Start Building
bgs = below ground surface

TABLE 3

ANALYTICAL DATA SUMMARY - POLYNUCLEAR AROMATIC HYDROCARBONS
 SITE 24/TPA SITE 9i - DUPLEX BUILDING AND FORMER E-SHOP
 ST. PAUL ISLAND, ALASKA

(Page 1 of 1)

Sample Number	Sample Depth (feet bgs)	Naphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Benz(a)anthracene (mg/kg)	Chrysene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzo(a)pyrene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	
TPA Site 9i Confirmation Samples																		
Duplex Building																		
SP24-CS-001-075	7.5	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-002-075	7.5	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-003-020	2	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-004-040	4	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-005-040	4	0.050	0.050 U	0.070	0.096	0.890	0.200	0.380	0.700	0.220	0.210	0.160	0.050 U	0.180	0.051	0.050 U	0.072	
SP24-CS-006-070	7	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-007-070	7	0.005 U	0.005 U	0.005 U	0.006	0.018	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-008-040	4	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-009-040	4	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-010-040	4	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-014-060	6	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-015-040	4	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Former E-Shop																		
SP24-CS-011-100	10	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-011-250 ^a	10	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-012-100	10	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-012-250 ^b	10	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-013-050	5	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-016-070	7	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.022	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-016-250 ^c	7	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.023	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-017-070	7	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-017-250 ^d	7	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-018-050	5	0.009	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP24-CS-019-050	5	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SP24-CS-020-050	5	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
<i>Method Two Cleanup Level^e</i>		43	NA	210	270	NA	4300	NA	1500	6	620	11	110	1	11	1	NA	

Notes

- bgs Below ground surface
- mg/kg Milligram per kilogram
- NA Not available
- TPA Two-Party Agreement
- U The analyte was analyzed for, but not reported above the sample reporting limit

- a Duplicate of sample number SP24-CS-011-100
- b Duplicate of sample number SP24-CS-012-100
- c Duplicate of sample number SP24-CS-016-070
- d Duplicate of sample number SP24-CS-017-070
- e Cleanup level is obtained from Title 18 of the *Alaska Administrative Code* 75, "Oil and Hazardous Substances Pollution Control Regulations," published by the State of Alaska and amended through October 28, 2000.